

VASCULAR FLORA OF
BIG LAKE BOTTOM WILDLIFE MANAGEMENT AREA,
ANDERSON COUNTY, TEXAS

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ABSTRACT

A floristic inventory of Big Lake Bottom Wildlife Management Area, a bottomland hardwood forest located on the Trinity River approximately 16 km SW of Palestine in Anderson Co., Texas, was conducted from October 1997 to July 2001. The study area is characterized by eight distinct alliances: 1) Overcup Oak-Water Hickory; 2) Willow Oak; 3) Planer Tree; 4) Cottonwood; 5) Sugarberry-Cedar Elm; 6) Bur Oak-Shumard Oak; 7) Post Oak-Blackjack Oak; and 8) Sand Post Oak-Bluejack Oak. The annotated list of taxa includes 99 families, 298 genera, and 459 species.

RESUMEN

Se realizó un inventario florístico del Big Lake Bottom Wildlife Management Area, un bosque de madera dura localizado en el río Trinity unos 16 km al SW de Palestine en el Anderson Co., Texas, desde octubre de 1997 a julio de 2001. El área de estudio se caracteriza por ocho alianzas distintas: 1) Overcup Oak-Water Hickory; 2) Willow Oak; 3) Planer Tree; 4) Cottonwood; 5) Sugarberry-Cedar Elm; 6) Bur Oak-Shumard Oak; 7) Post Oak-Blackjack Oak; y 8) Sand Post Oak-Bluejack Oak. El catálogo florístico de taxa incluye 99 familias, 298 géneros, y 459 especies.

INTRODUCTION

The Texas Parks and Wildlife Department began purchasing bottomland in 1991 in an effort to preserve this unique and rapidly disappearing hardwood habitat. Among the first acquisitions was the area now known as Big Lake Bottom Wildlife Management Area (BLBWMA), one of the largest remaining bottomland hardwood tracts of its type in the central Trinity River basin. The area consists of approximately 1684.8 ha that lie within the transition zone between the Pineywoods and the Post Oak Savannah vegetational areas of eastern Texas (Gould 1962), about 16 km SW of Palestine. This alluvial bottomland was formed

by the periodic erosion and sedimentation of the river as it flowed through the region. The poorly draining soils and uniform topography produced a forest dominated by hydrophytes.

Because of its unsuitability for most agricultural pursuits, the management area has remained relatively free from outside disturbances. Two of the past major disturbances were selective harvesting of timber in the late 1930s and early 1940s and the clearing of about 65 ha for cultivation in the 1950s. Current use of the property is limited to human recreational activities. Past and present water control and agricultural practices have generally widened the Trinity River, resulting in severe erosion problems along sloughs and creeks. This erosion problem has been compounded by the use of all-terrain vehicles on the management area.

Since the management area was purchased to preserve the bottomland habitat along the Trinity River, this systematic inventory of the vascular flora is imperative for proper management. Results of the study will be used by resource managers in decisions concerning activities that might affect the plant communities and ecosystems of the area. These activities include future land purchases or trades, mineral exploration, granting of rights-of-way and easements, and public use.

Field work was conducted primarily from October 1997 to October 1999, with occasional visits made until July 2001 to search for taxa expected to occur but not previously collected. The survey included more than 50 field visits that produced 532 field collections including ferns, gymnosperms, and flowering plants. Voucher specimens are deposited in the Baylor University Herbarium (BAYLU).

DESCRIPTION OF STUDY AREA

BLBWMA is located within the humid subtropical zone. Temperatures rarely go below -12°C in winter or above 38°C in summer, with the mean temperature being near 20°C (Hatch et al. 1990). The soil of the study area is predominately composed of alluvium and fluvial terrace deposits and a small area of carbonaceous clay, silt, and ironstone on the Recklaw Formation (University of Texas Bureau of Economic Geology-Palestine Sheet 1993). The deep clay bottomland soils are classified as part of the Kaufman-Trinity Association while the more loamy and sandy uplands belong to the Axtell-Lufkin Association (Coffee 1970). Elevation varies from 57.9–82.3 m above sea level.

Nixon and Willett (1974), in the only previous study of the site located, described 5 bottomland hardwoods types. These were described as coalitions of species and not afforded names as such. Many species were included in more than one type, apparently based upon abundance. These types actually overlapped to some extent, thus we find it advantageous to use the alliance method of community description.

The BLBWMA vegetation areas can be segregated into eight alliances (National Vegetation Classification System (NVCS) 1997) based on dominant species, landscape position, and soil water content. The location, characteristic species, and a short description of each alliance follow.

Overcup Oak (Water Hickory) Seasonally Flooded Forest Alliance

The Overcup Oak (Water Hickory) Alliance is characterized by temporary standing water during and after flood events and consists of approximately 818.3 ha. This alliance is found throughout the site on heavy clay soils (Fig. 1). Dominant trees are *Quercus lyrata*, *Carya aquatica*, *Celtis laevigata* var. *laevigata* and *Ulmus americana*. Other common woody species in this area include *Fraxinus pennsylvanica*, *Ilex decidua*, and *Crataegus viridis*. Common herbaceous species include *Iva annua*, *Xanthium strumarium*, *Justicia ovata*, *Leersia lenticularis*, *Saururus cernuus*, *Lobelia cardinalis*, *Diodia virginiana*, *Gratiola virginiana*, and *Boehmeria cylindrica*.

Willow Oak Seasonally Flooded Forest Alliance

Willow Oak Alliance consists of seasonally flooded areas and is the smallest wet bottomland feature on the area at 50.2 ha. These are depressed areas of periodic inundation in which hardwood trees dominate and form a dense canopy. This alliance is located north of the drainage channel of Big Lake into Keechie Creek, an area that has been carved out by flooding events (Fig. 1). Common tree species include *Quercus phellos*, *Q. nigra*, *Celtis laevigata* var. *laevigata*, *Carya aquatica*, *Nyssa sylvatica*, *Ilex decidua*, and *Liquidambar styraciflua*. Characteristic herbs of this forest include *Carex frankii*, *Juncus coriaceus*, and *Trachelospermum difforme*.

Planer Tree Seasonally Flooded Forest Alliance

Planer Tree Alliance comprises 85.8 ha and consists of mid-story forests in backswamps and sloughs that are produced in soils created by rapid siltation. This alliance occurs along the corridor of Cedar Creek Slough and along Keechie Creek Slough just south of where Keechie Creek joins the Trinity River, as well as in a small section of the Johnson Tract (Fig. 1). Common woody plants include *Planera aquatica*, *Gleditsia aquatica*, *Forestiera acuminata*, *Carya aquatica*, *Cephalanthus occidentalis*, *Fraxinus pennsylvanica*, *Salix nigra*, and *Berchemia scandens*. Herbaceous plants include *Saururus cernuus*, *Boehmeria cylindrica*, *Sesbania drummondii*, and *S. exaltata*.

Cottonwood Temporarily Flooded Forest Alliance

Cottonwood Alliance consists of 10.9 ha of periodically flooded forests on sandy alluvium primarily on developed river fronts. It is restricted to a narrow strip adjacent to the Trinity River bank (Fig. 1). Common tree and shrub species include *Populus deltoides*, *Salix nigra*, *Acer negundo*, *Gleditsia aquatica*, *Celtis laevigata* var. *laevigata*, *Betula nigra*, *Ulmus americana*, *Morus rubra*, *Cornus*

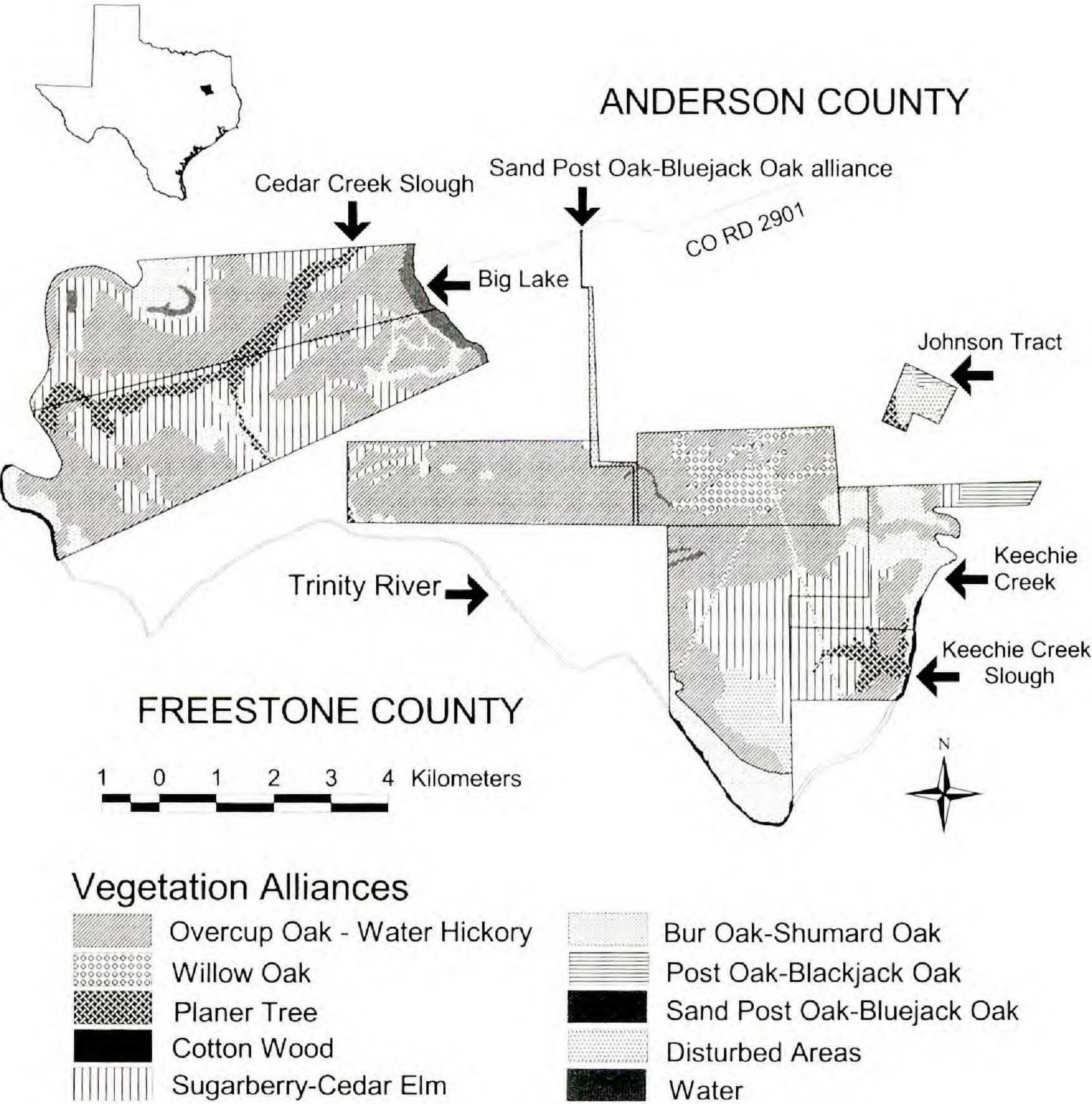


Fig. 1. A vicinity map showing Big Lake Bottom Wildlife Management Area Vegetation Alliances, Trinity River, and Big Lake (ESRI Inc. ArcView ver. 3.1).

drummondii, *Symphoricarpos orbiculatus*, and *Forestiera acuminata*. Herbaceous and woody vines are well represented. Common species include *Mikania scandens*, *Vitis riparia*, *V. palmata*, *Smilax bona-nox*, *S. tamnoides*, *Ampelopsis arborea*, *Toxicodendron radicans*, *Brunnichia ovata*, *Ipomoea cordatotriloba*, and *I. lacunosa*.

Sugarberry-Cedar Elm Temporarily Flooded Forest Alliance

Sugarberry-Cedar Elm Alliance consists of periodically flooded, forested, flat areas with rich base soils. This alliance occupies 412.4 ha along Cedar Creek Slough and along drainages of Keechie Creek (Fig. 1). Common trees include *Celtis laevigata* var. *laevigata*, *Ulmus crassifolia*, *U. alata*, *Gleditsia triacanthos*, *Sapindus saponaria* var. *drummondii*, *Quercus macrocarpa*, *Fraxinus*

pennsylvanica, *F. americana*, and *Crataegus mollis*. Herbaceous plants which typify the area include *Iva annua*, *Carex cherokeensis*, *C. crus-corvi*, *Panicum anceps*, and *Leersia oryzoides*.

Bur Oak-Shumard Oak Forest Alliance

Bur Oak-Shumard Oak Alliance occurs on bluffs and terraces with clay soils and rich humus layers. This alliance also occurs on two bluff areas that originated as a result of severe changes in river direction (Fig. 1). The area occupies 178.9 ha. This alliance was not formally described as occurring in Texas by the NVCS (1997) or as a series level community by Diamond et al. (1987) and consequently is mentioned here as occurring in Texas for the first time. Common trees and shrubs include *Quercus macrocarpa* var. *macrocarpa*, *Q. shumardii*, *Q. stellata*, *Sideroxylon lanuginosum*, *Sophora affinis*, *Juniperus virginiana*, *Crataegus viridis* var. *viridis*, *Celtis laevigata* var. *laevigata*, *Ilex decidua*, and *Cercis canadensis*. Herbaceous plants which typify the area include *Carex cherokeensis*, *Scleria triglomerata*, *Chasmanthium latifolium*, *Poa autumnalis*, *Tradescantia ohiensis*, *Arisaema dracontium*, *Podophyllum peltatum*, *Dioscorea quaternata*, *Clematis pitcheri*, *Urtica chamaedryoides*, *Stachys crenata*, *S. tenuifolia*, *Ruellia nudiflora* var. *runyonii*, *Elephantopus carolinianus*, *Matelea gonocarpos*, *Myosotis macrosperma*, *Scutellaria cardiophylla*, *Euphorbia spathulata*, *Galium circaezans*, *Oxalis violacea*, and *Parietaria pensylvanica*.

Post Oak-Blackjack Oak Woodland Alliance

Post Oak-Blackjack Oak Woodland Alliance comprises 21.5 ha and consists of upland wooded areas on gentle sandy-loam slopes and abrupt deep sand terraces. This alliance is very species rich and found on the small Johnson Tract and near entrances at each of the area gates (Fig. 1). Common trees and shrubs include *Quercus stellata*, *Q. marilandica*, *Q. incana*, *Q. falcata*, *Q. nigra*, *Q. phellos*, *Carya texana*, *Juniperus virginiana*, *Diospyros virginiana*, *Vaccinium arboreum*, *Cercis canadensis*, *Ulmus alata*, *Fraxinus americana*, *Callicarpa americana*, *Crataegus crus-galli*, *C. marshalli*, *Prunus angustifolia* var. *angustifolia*, *P. mexicana*, *P. serotina* var. *serotina*, *Rubus trivialis*, *Rhus copallina*, and *Symphoricarpos orbiculatus*. Herbaceous species include *Chasmanthium sessiliflorum*, *Elymus virginicus*, *Eragrostis secundiflora*, *Commelina erecta*, *Tradescantia hirsutiflora*, *Vitis mustangensis*, *V. rotundifolia*, *Sanicula canadensis*, *Symphyotrichum patens*, *Podophyllum peltatum*, *Hypericum hypericoides*, *Hypericum drummondii*, *Passiflora incarnata*, and *Geum canadense*.

Sand Post Oak-Bluejack Oak Woodland Alliance

This alliance occurs in deep sandy soils on a ridge above the floodplain. It consists of less than 5 ha (Fig. 1) located on the east side of Big Lake. Common tree species include *Quercus margarettiae*, *Q. marilandica*, *Q. incana*, and *Carya texana*. Other woody plants are *Opuntia stricta*, *Yucca louisianensis*, *Rhus copallina* var. *latifolia*, *Cornus florida*, *Vaccinium arboreum*, *Sassafras albidum*,

and *Prunus gracilis*. Herbaceous plants include *Tradescantia hirsutiflora*, *Matelea cynanchoides*, *Eragrotis secundiflora*, *Loeflingia squarrosa*, *Helianthemum rosmarinifolium*, *Lechea tenuifolia*, *Cnidoscolus texanus*, and *Dalea villosa*.

FLORISTICS

The BLBWMA flora includes 459 species in 298 genera in 99 families. Average number of species per genus is approximately 1.5. Families with the largest number of species (in parentheses) are Poaceae (55), Asteraceae (54), Fabaceae (32) and Cyperaceae (25). Other families with a relatively large number of species are Lamiaceae (14), Apiaceae (12), Euphorbiaceae (12), Rosaceae (12), and Scrophulariaceae (10). Genera with the most species include *Carex* (12), *Quercus* (9), *Panicum* (8), *Cyperus* (7), *Smilax* (6), and *Juncus* (5). The number of non-native species is 23, which is about five percent of the total flora.

Three plants collected on BLBWMA are considered threatened by the Texas Parks and Wildlife Department and The Nature Conservancy of Texas (Carr 2001). *Brazoria truncata* var. *pulcherrima* (*B. pulcherrima* Lundell) is considered sensitive and ranked G3 (globally) and S3 (state). Both it and *Yucca louisianensis* are also notable for being included in Estill and Cruzan's (2001) list of narrow endemics of southeastern United States. *Curcubita texana* is also ranked G3 (globally) and S3 (state). The species was historically widely distributed along major rivers in the eastern half of Texas but much of its habitat has been lost to impoundments, agriculture, and urban development. An accurate assessment of its current status is difficult because of its ephemeral nature. *Cyperus grayoides* is ranked G3 (globally) and S3 (state).

Other noteworthy plants were new to Anderson County. Correll and Johnston (1970) report *Dioscorea quaternata* as mainly occurring in more northeastern Texas. The BLBWMA record is near the most southwestern limit of the species distribution. *Symphyotrichum eulae*, a Texas endemic, also occurs in the area. The distribution of this species is primarily in east-central Texas, where it is considered rare or uncommon. *Rhynchosia minima* var. *minima* is known from the coastal plain and northward to Newton, Houston, Travis, Bexar, Robinson, and Grimes counties. The present record is the northernmost record for the species within the state. *Heliotropium procumbens* is mostly a coastal (and western) species known to occur northward to Liberty, Waller, and Brazos counties. The new record extends the known distribution within the state farther northward. Finally, *Phyllanthus pudens* has been recorded in Texas as far north as Brazos, Madison, and Robinson counties. The Anderson County record extends the distribution farther within the state and provides a new county record.

The area contains the only known occurrence of Bur Oak-Shumard Oak Forest alliance within the state (see above).

ANNOTATED LIST OF VASCULAR PLANT TAXA
BIG LAKE BOTTOM WILDLIFE MANAGEMENT AREA, ANDERSON COUNTY,
TEXAS

The annotated checklist is divided into pteridophytes, gymnosperms, and flowering plants, which are subdivided into monocots and dicots. Family, genus, and species are arranged alphabetically beneath each major heading. Nomenclature follows that of Correll and Johnston (1970), Correll and Correll (1972), and Gould (1975). As needed, names were updated using Jones et al. (1997). Common names generally follow those of Hatch et al. (1990). Collector and collection numbers are given as: KF = Kay Fleming or JS = Jason Singhurst followed by a number. An asterisk (*) denotes an introduced species.

PTERIDOPHYTA

ASPLENIACEAE

Asplenium platyneuron (L.) B.S.P., Ebony spleenwort, JS 6167.

DRYOPTERIDACEAE

Woodsia obtusa (Spreng.) Torr., Blunt-lobed cliff fern, JS 6166.

MARSILEACEAE

Marsilea vestita Hook. & Grev., Hooked water clover, KF 369.

OPHIOGLOSSACEAE

Botrychium biternatum (Savign.) Underw., Cutleaved grapefern, KF 311.

Botrychium dissectum Spreng., Rattlesnake fern, KF 456.

Ophioglossum vulgatum L., Common adder's tongue, KF 282.

POLYPODIACEAE

Pleopeltis polypodioides (L.) Andrews & Windham var. *michauxiana* (Weath.) Andrews & Windham, Resurrection fern, JS 6320.

GYMNOSPERMAE

CUPRESSACEAE

Juniperus virginiana L., Eastern red cedar, KF 548.

MONOCOTYLEDONEAE

AGAVACEAE

Yucca louisianensis Trel., Louisiana yucca, KF 341.

ALISMATACEAE

Echinodorus berteroi (Spreng.) Fassett, Beaked burweed, KF 419.

Echinodorus cordifolius (L.) Griseb., Heartleaf burweed, KF 423.

Sagittaria latifolia Willd., Duck potato, KF 418.

ARACEAE

Arisaema dracontium (L.) Schott, Green dragon, JS 6693.

ARECACEAE

Sabal minor (Jacq.) Pers., Dwarf palmetto, KF 486.

BROMELIACEAE

Tillandsia usneoides (L.) L., Spanish moss, JS 6681.

COMMELINACEAE

Commelina diffusa Burm., Spreading dayflower, KF 633.

Commelina erecta L., Erect dayflower, KF 335.

Tradescantia hirsutiflora Bush, Hairy spiderwort, KF 265.

Tradescantia ohioensis Raf., Ohio spiderwort, KF 239.

CYPERACEAE

Carex amphibola Steud., Amphibious sedge, KF 473.

Carex cephalophora Muhl. ex Willd., Woodbank sedge, KF 454.

Carex cherokeensis Schwein., Cherokee sedge, JS 6164.

Carex complanata Torr. & Hook., Sedge, KF 457.

Carex crus-corvi Suttleworth ex Kunze, Crowfoot sedge, KF 271.

Carex flaccosperma Dewey, Thinfruit sedge, KF 472.

Carex frankii Kunth, Frank's sedge, KF 452.

Carex lurida Wahl., Shallow sedge, KF 470.

Carex oxylepis Torr. & Hook., Sharp-scale sedge, KF 467.

Carex retroflexa Muhl. ex Willd., Reflexed sedge, KF 466.

Carex tetrastachya Scheele, Britton's sedge, KF 461.

Carex texensis (Torr.) Bailey, Texas sedge, KF 286.

Cyperus croceus Vahl, Baldwin flatsedge, KF 451.

Cyperus erythrorhizos Muhl., Redroot flatsedge, KF 636.

Cyperus grayioides Mohlenb., flatsedge, KF 675a.

Cyperus retrorsus Chapm., Backward flatsedge, KF 662.

Cyperus strigosus L. var. *strigosus*, False nutsedge, KF 678.

Cyperus surinamensis Rottb., Tropical flatsedge, KF 675.

Cyperus virens Michx. var. *virens*, Green flatgrass, KF 386.

Eleocharis microcarpa Torr., Smallseed spikerush, KF 317.

Eleocharis obtusa (Willd.) Schult., Blunt spikerush, KF 228.

Eleocharis palustris (L.) Roem. & Schult., Spikerush, KF 267.

Rhynchospora corniculata (Lam.) Gray, Horned beakrush, KF 415.

Scirpus pendulus Muhl., Small bulrush, JS 6174.

Scleria triglomerata Michx., Tall nutrush, KF 266.

DIOSCOREACEAE

Dioscorea quaternata (Walt.) Gmel., Atlantic yam, KF 314.

IRIDACEAE

Iris brevicaulis Raf., Shortstem iris, KF 1120.

Sisyrinchium albidum Raf., White blue-eyed grass, KF 409.

Sisyrinchium atlanticum Bicknell, Blue-eyed grass, KF 476.

Sisyrinchium langloisii Greene, Pale blue-eyed grass, KF 249.

JUNCACEAE

Juncus coriaceus Mack., Leather rush, KF 302.

Juncus effusus L. var. *solutus* Fern. & Weig., Common rush, KF 305.

Juncus marginatus Rostk. var. *setosus* Cov., Border rush, KF 431.

Juncus scirpoides Lam., Strong rush, KF 407.

Juncus tenuis Willd., Slender rush, KF 474.

LILIACEAE

Allium canadense L. var. *canadense*, Canada garlic, KF 289.

Allium drummondii Regel, Drummond's onion, KF 275.

Cooperia drummondii Herb., Rain lily, KF 709.

Hymenocallis eulae Shinnars, Late spider lily, KF 529.

Hymenocallis liriosme (Raf.) Shinnars, Spider lily, KF 326.

Hypoxis hirsuta (L.) Cov., Common goldstar, KF 331.

Nothoscordum bivalve (L.) Britt., Crow poison, KF 224.

ORCHIDACEAE

Spiranthes lacera (Raf.) Raf. var. *gracilis* (Bigel.) Luer., Slender ladies' tresses, KF 212.

Spiranthes laciniata (Small) Ames, Spring ladies' tresses, KF 399.

POACEAE

Agrostis hyemalis (Walt.) B.S.P., Winter bentgrass, KF 429.

Agrostis perennans (Walt.) Tuckerman, Autumn bentgrass, KF 458.

Aira elegans Willd. ex Kunth, Annual hairgrass, KF 353.

Alopecurus carolinianus Walt., Carolina foxtail, KF 461.

Andropogon ternarius Michx. var. *ternarius*, Splitbeard bluestem, KF 653.

Andropogon virginicus L., Broomsedge bluestem, KF 425.

Aristida oligantha Michx., Oldfield threeawn, KF 624.

Aristida purpurea Nutt., Red threeawn, KF 625.

Bothriochloa ischaemum (L.) Keng. var. *songarica* (Fisch. & Mey.) Celerier & Harlan, King Ranch bluestem, KF 691. *

Briza minor L., Little quaking grass, KF 397. *

Bromus secalinus L., Rye brome, KF 380. *

Bromus catharticus Vahl, Rescuegrass, KF 264. *

Buchloe dactyloides (Nutt.) Engelm., Buffalograss, KF 390.

Cenchrus spinifex A. Cav., Coastal sandbur, KF 705.

Chasmanthium latifolium (Michx.) Yates, Longleaf uniola, KF 361.

Chasmanthium sessiliflorum (Poir.) Yates, Sessile flowered chasmanthium, KF 674.

Cynodon dactylon (L.) Pers. var. *dactylon*, Bermuda grass, KF 537. *

Digitaria ciliaris (Retz.) Koel., Southern crabgrass, KF 645.

Echinochloa walteri (Pursh) Heller, Walter's barnyard grass, KF 686.

Elymus canadensis L., Canada wildrye, KF 680.

Elymus virginicus L. var. *virginicus*, Virginia wildrye, KF 650.

Eragrostis hypnoides (Lam.) B.S.P., Teal lovegrass, KF 639.

Eragrostis pectinacea (Michx.) Nees ex Steud., Carolina lovegrass, KF 660.

Eragrostis secundiflora Presl. subsp. *oxylepis* (Torr.) S. D. Koch, Red lovegrass, KF 398.

Eragrostis spectabilis (Pursh) Steud., Purple lovegrass, KF 703.

Gymnopogon ambiguus (Michx.) B.S.P., Bearded skeletongrass, KF 651.

Hordeum pusillum Nutt., Little barley, KF 269.

Leersia lenticularis Michx., Catchfly cutgrass, KF 644.

Leersia oryzoides (L.) Sw. var. *oryzoides*, Rice cutgrass, KF 649.

Leersia virginica Willd., White cutgrass, KF 673.

Lolium perenne L., Perennial ryegrass, JS 6670. *

Panicum acuminatum Sw. var. *acuminatum*, Woolly rosettegrass, KF 316.

Panicum nodatum Hitchc. & Chase, Sarita rosettegrass, JS 5366.

Panicum oligosanthos A. Shult., Rosettegrass, KF 424.

Panicum anceps Michx., Beaked panicum, KF 664.

Panicum dichotomum L., Forked panicum, KF 659.

Panicum hemitomom Schult., Maiden cane, KF 619.

Panicum ravenelii Scribn. & Merrill, Ravenel's panicum, KF 315.

Panicum virgatum L., Switchgrass, KF 643.

Paspalum dilatatum Poir., Dallisgrass, KF 389.

Paspalum floridanum Michx., Florida paspalum, KF 620.

Paspalum notatum Flugge, Bahiagrass, KF 522. *

Paspalum urvillei Steud., Vaseygrass, KF 681. *

Phalaris caroliniana Walt., Carolina canarygrass, JS 6671.

Piptochaetium avenaceum (L.) Parodi, Blackseed needlegrass, KF 300.

Poa annua L., Annual bluegrass, KF 505. *

Poa autumnalis Muhl. ex Ell., Autumn bluegrass, KF 280.

Setaria parviflora (Poir.) Kergeulen, Knotroot bristlegrass, KF 637.

Sorghum halepense (L.) Pers., Johnstongrass, KF 622. *

Tridens albescens (Vasey) Woot. & Standl., White tridens, KF 642.

Tridens flavus (L.) Hitchc., Purpletop, KF 672.

Tridens strictus (Nutt.) Nash, Longspike tridens, KF 621.

Tripsacum dactyloides (L.) L., Eastern gamma-grass, KF 958.

Triticum aestivum L., Wheat, KF 363. *

Vulpia octoflora (Walt.) Rydb., Common sixweeks grass, KF 403.

SMILACACEAE

Smilax bona-nox L., Sawtooth greenbriar, KF 284.

Smilax glauca Walt., Cat greenbriar, KF 663.

Smilax rotundifolia L., Common greenbriar, JS 6679.

Smilax smallii Morong, Small's greenbriar, KF 631.

Smilax tamnoides L., Bristly greenbriar, KF 283.

TYPHACEAE

Typha latifolia L., Common cattail, KF 478.

DICOTYLEDONEAE

ACANTHACEAE

Dicliptera brachiata (Pursh) Spreng., False mint, KF 206.

Justicia ovata (Walt.) Lindau var. *lanceolata* (Chapm.) Long, Lance-leaved water willow, KF 209.

Ruellia nudiflora (Englem. & Gray) Urban var. *runyonii* (Tharp. & Barkl.) B.L. Turner, Violet ruellia, JS 6315.

Ruellia pedunculata Torr. ex Gray, Low ruellia, KF 360.

ACERACEAE

Acer negundo L. var. *negundo*, Box elder, KF 208.

AMARANTHACEAE

Amaranthus albus L., White amaranth, KF 606.

Amaranthus blitum L., Green amaranth, JS 6311

Amaranthus rudis Sauer, Amaranth, KF 607.

Froelichia drummondii Moq., Drummond's snake cotton, KF 542.

ANACARDIACEAE

Rhus copallina L. var. *latifolia* H. Engler, Wing-rib sumac, KF 276.

Toxicodendron radicans (L.) O. Ktze. var. *radicans*, Poison ivy, KF 310.

APIACEAE (UMBELLIFERAE)

Chaerophyllum tainturieri Hook., Chervil, JS 6169.

Cyclospermum leptophyllum (Pers.) Sprague ex Britt. & P.Wils., Slimlobe celery, KF 465.

Cynosciadium digitatum DC., Finger dogshade, KF 372.

Daucus pusillus Michx., Wild carrot, KF 381.

Eryngium hookeri Walp., Simple leaf eryngo, KF 487.

Hydrocotyle verticillata Thunb., Whorled pennywort, KF 655.

Limnoscadium pinnatum (DC.) Math. & Const., Arkansas dogshade, KF 400.

Polytaenia nuttallii DC., Prairie parsley, KF 272.

Sanicula canadensis L., Canada sanicle, KF 412.

Spermolepis divaricata (Walt.) Raf. ex Ser., Forked scaleseed, KF 355.

Spermolepis inermis (Nutt. ex DC.) Math. & Const., Scaleseed, KF 287.

Trepocarpus aethusae Nutt. ex DC., Trepocarpus, KF 460.

APOCYNACEAE

Amsonia illustris Woods., Bluestar, KF 247.

Trachelospermum difforme (Walt.) Gray, Climbing dogbane, KF 420.

AQUIFOLIACEAE

Ilex decidua Walt., Deciduous holly, JS 6136.

Ilex opaca Ait. var. *opaca*, American holly, KF 519.

Ilex vomitoria Ait., Yaupon holly, KF 404.

ASCLEPIADACEAE

Asclepias amplexicaulis Smith, Bluntleaf milkweed, KF 377.

Asclepias tuberosa L. subsp. *interior* Woods., Butterfly milkweed, KF 349.

Asclepias viridis Walt., Antelopehorn milkweed, KF 319.

Matelea cynanchoides (Engelm.) Woods., Milkweed vine, KF 695.

Matelea decipiens (Alex.) Woods., Milkweed vine, KF 667.

Matelea gonocarpos (Walt.) Shinnars, Milkweed vine, KF 306.

ASTERACEAE

Acmella oppositifolia (Lam.) Jansen var. *repens* (Walt.) Jansen, Creeping spot flower, JS 6305.

Ambrosia psilostachya DC., Western ragweed, KF 532.

Ambrosia trifida L., Giant ragweed, KF 533.

Baccharis halimifolia L., Eastern baccharis, KF 516.

Bidens bipinnata L. var. *bitermatoides* E. Sherff, Spanish needles, KF 608.

Boltonia diffusa Ell. var. *diffusa*, Small head boltonia, KF 596.

Brickellia eupatorioides (L.) Shinnars, False bonset, KF 668.

Chrysopsis pilosa Nutt., Soft gold aster, KF 444.

Cirsium horridulum Michx. var. *elliottii* T. & G., Bull thistle, KF 327.

Conyza canadensis (L.) Cronq., Horseweed conyza, KF 676.

Conoclinium coelestinum (L.) DC., Blue mist flower, KF 205.

Coreopsis basalis (Dietr.) Blake, Golden coreopsis, KF 346.

Coreopsis tinctoria Nutt. var. *tinctoria*, Plains coreopsis, KF 433.

Croptilon divaricatum (Nutt.) Raf., Scratch daisy, KF 539.

Dracopis amplexicaulis (Vahl) Cass., Dracopis, KF 366.

Echinacea pallida (Nutt.) Nutt., Purple cone flower, KF 405.

Eclipta prostrata (L.) L., Yerba de tago, KF 594.

Elephantopus carolinianus Raeusch., Leafy elephant foot, KF 630.

Erigeron tenuis T. & G., Slender fleabane, KF 248.

Eupatorium compositifolium Walt., Yankeeweed, KF 623.

Eupatorium serotinum Michx., Late eupatorium, KF 545.

Facelis retusa (Lam.) Sch. Bip., Facelis, KF 301. *

Fleischmannia incarnatum (Walt.) King & Robinson, Pink eupatorium, KF 641.

Gamochaeta purpurea (L.) Cabrera, Greenleaf cudweed, KF 298.

Grindelia papposa G. Nesom & Y. Suh, saw-leaf daisy, KF 1105.

Helenium amarum (Raf.) H. Rock, Bitter sneezeweed, KF 483.

Helianthus annuus L., Common sunflower, KF 1002.

Helianthus debilis Nutt., Cucumber leaf sunflower, KF 378.

Heterotheca subaxillaris (Lam.) Britt. & Rusby, Yellow camphorweed, KF 234.

Hieracium gronovii L. Gronovius' hawkweed, KF 411.

Hymenopappus scabiosaeus L'Her., Flattop woollywhite, KF 325.

Iva annua L., Sumpweed, KF 210.

Krigia cespitosa (Raf.) Chamb., Weedy dwarf dandelion, JS 6177.

Lactuca floridana (L.) Gaertn., Florida wild lettuce, KF 628.

Liatris squarrosa (L.) Michx., Variable gayfeather, KF 523.

Mikania scandens (L.) Willd., Climbing hemp vine, KF 495.

Packera tampicana (DC.) C. Jeffrey, Golden groundsel, KF 243.

Pluchea camphorata (L.) DC., Camphor weed, KF 515.

Pluchea purpurascens (Sw.) DC., Purple camphor weed, KF 647.

Pyrrhopappus carolinianus (Walt.) DC., Carolina false dandelion, KF 468.

Rudbeckia hirta L., Late coneflower, KF 383.

Senecio ampullaceus Hook., Texas groundsel, JS 6180.

Solidago canadensis L., Tall goldenrod, KF 632.

Solidago petiolaris Ait., Downy goldenrod, KF 665.

Solidago radula Nutt., Rough goldenrod, KF 627.

Solidago ulmifolia Muhl. ex Willd., Noble goldenrod, KF 658.

Soliva pterosperma (Juss.) Less., Lawn burweed, KF 501.

Symphotrichum dumosum (L.) G. Nesom, Bushy aster, KF 213.

Symphotrichum eulae (Shinners) G. Nesom, Simple aster, JS 6308.

Symphotrichum patens (Ait.) G. Nesom, Skydrop aster, KF 657.

Verbesina encelioides (Cav.) Benth. & Hook. ex Gray var. *encelioides*, Cowpen daisy, KF 203.

Verbesina virginica L. var. *virginica*, Frostweed, KF 583.

Vernonia baldwinii Torr., Baldwin's ironweed, JS 6319.

Vernonia texana (Gray) Small, Texas ironweed, KF 463.

Xanthium strumarium L., Common cocklebur, KF 489.

BERBERIDACEAE

Podophyllum peltatum L., May apple, KF 39.

BETULACEAE

Betula nigra L., River birch, KF 540.

BIGNONIACEAE

Campsis radicans (L.) Seeman ex Bureau, Trumpet creeper, KF 484

BORAGINACEAE

Heliotropium indicum L., Turnsole heliotrope, KF 200.

Heliotropium procumbens Mill. var. *procumbens*, Fourspike heliotrope, KF 688.

Myosotis macrosperma Engelm., Spring forget-me-not, KF 296.

BRASSICACEAE

Cardamine parviflora L. var. *arenicola* (Britt.) Schulz., Sand bittercress, KF 463.

Cardamine pensylvanica Muhl. ex Willd., Pennsylvania bittercress, JS 6158.

Lepidium virginicum L., Poor man's peppergrass, KF 253.

Rorippa palustris (L.) Besser, Bog bittercress, KF 417.

Rorippa sessiliflora (Nutt. ex T. & G.) Hitchc., Stalkless yellowcress, JS 6304.

BUDDLEJACEAE

Polypremum procumbens L., Juniper leaf, KF 352.

CACTACEAE

Opuntia stricta (Haw.) Haw., Southern spineless cactus, KF 393.

CALLITRICHACEAE

Callitriche heterophylla Pursh subsp. *heterophylla*, Large water starwort, JS 6178.

CAMPANULACEAE

Lobelia appendiculata DC. var. *appendiculata*, Earlobe lobelia, KF 347.

Lobelia cardinalis L., Cardinal flower, JS 6314.

Triodanis perfoliata (L.) Nieuw. var. *perfoliata*, Claspig Venus looking glass, KF 320.

CAPRIFOLIACEAE

Lonicera japonica Thunb., Japanese honeysuckle, KF 329. *

Lonicera sempervirens L. var. *sempervirens*, Trumpet honeysuckle, KF 257.

Symphoricarpos orbiculatus Moench., Coral berry, KF 364.

Viburnum rufidulum Raf., Rusty blackhaw, KF 241.

CARYOPHYLLACEAE

Arenaria serpyllifolia L. subsp. *serpyllifolia*, Thyme-leaved sandwort, KF 502. *

Cerastium brachypodum (Engelm. ex Gray) Robins., Shortstalk chickweed, JS 6162.

Cerastium glomeratum Thuillier, Clustered flower chickweed, JS 6161. *

Loeflingia squarrosa Nutt. subsp. *squarrosa*, Spreading loeflingia, KF 435.

Minuartia drummondii (Shinners) McNeill, Drummond's sandwort, KF 244.

Minuartia patula (Michx.) Mattf. var. *patula*, Pitcher sandwort, KF 312.

Silene antirrhina L., Seedy catchfly, KF 382.

Stellaria media (L.) Vill. subsp. *media*, Common chickweed, JS 6160. *

CHENOPODIACEAE

Chenopodium ambrosioides L. var. *ambrosioides*, Wormseed, KF 541.

CISTACEAE

Helianthemum rosmarinifolium Pursh, Rosemary's rockrose, KF 351.

Lechea mucronata Raf., Hairy pinweed, KF 402.

Lechea tenuifolia Michx., Narrowleaf pinweed, KF 410.

CLUSIACEAE

Hypericum drummondii (Grev. & Hook.) T. & G., Drummond's St. John's wort, KF 449.

Hypericum hypericoides (L.) Crantz, St. Andrew's cross, KF 242.

CONVOLVULACEAE

Dichondra carolinensis Michx., Ponyfoot, JS 6170.

Ipomoea lacunosa L., Pitted morning glory, KF 202.

Ipomoea cordatotriloba A. Dennstaedt, Sharp pod morning glory, KF 605.

CORNACEAE

Cornus drummondii C. Mey., Roughleaf dogwood, KF 256.

Cornus florida L., Flowering dogwood, JS 6179.

Nyssa sylvatica Marsh., Black gum, KF 701.

CUCURBITACEAE

Cucumis melo L. subsp. *melo*, Muskmelon, KF 692a.

Cucurbita texana Gray, Texas gourd, KF 589.

Melothria pendula L., Drooping melonette, KF 964.

CUSCUTACEAE

Cuscuta pentagona Engelm., Dodder, KF 543.

EBENACEAE

Diospyros virginiana L., Common persimmon, KF 464.

ERICACEAE

Vaccinium arboreum Marsh., Farkleberry, KF 406.

EUPHORBIACEAE

Acalypha gracilens Gray, Slender copperleaf, KF 661.

Cnidoscolus texanus (Mull. Arg.) Small, Texas bull nettle, KF 318.

Croton capitatus Michx., Woolly croton, KF 490.

Croton glandulosus L., Northern croton, KF 531.

Croton michauxii G. Webster, Narrowleaf rushfoil, KF 555.

Croton monanthogynus Michx., One seed croton, KF 635.

Euphorbia dentata Michx., Toothed spurge, KF 354.

Euphorbia nutans Lag., Eyebane spurge, KF 597.

Euphorbia prostrata Ait., Prostrate euphorbia, KF 690.

Euphorbia spathulata Lam., Warty spurge, KF 469.

Phyllanthus pudens Wheeler, Birdseed leaf flower, KF 685.

Tragia brevispica Engelm. & Gray, Heartleaf noseburn, JS 6685.

FABACEAE

Amorpha fruticosa L., Indigo bush amorphia, KF 441.

Astragalus crassicaarpus Nutt., Ground plum milkvetch, KF 235.

Baptisia nuttalliana Small, Nuttall's wild indigo, KF 342.

Centrosema virginianum (L.) Benth., Butterfly pea, KF 446.

Cercis canadensis L. var. *canadensis*, Eastern redbud, JS 6132.

Chamaecrista fasciculata (Michx.) Greene, Partridge pea, KF 477.

Clitoria mariana L., Atlantic pigeon wings, KF 967.

Dalea villosa (Nutt.) Spreng., Prairie clover, KF 350.

Desmanthus illinoensis (Michx.) MacM. ex Robins & Fern., Illinois bundle flower, KF 615.

Desmodium laevigatum (Nutt.) DC., Smooth beggar's ticks, KF 217.

Desmodium paniculatum (L.) DC., Panicked beggar's ticks, KF 426.

Desmodium sessilifolium DC., Sessileleaf beggar's ticks, KF 1033.

Galactia regularis (L.) B.S.P., Downy milkpea, KF 656.

Gleditsia aquatica Marsh., Water honey locust, KF 517.

Gleditsia triacanthos L., Common honey locust, KF 1017.

Glottidium vesicaria (Jacq.) R. M. Harper, Bagpod, KF 604.

Kummerowia striata (Thunb.) Hook. & Arn., Japanese bush clover, KF 626.

- Lathyrus pusillus* Ell., Low peavine, KF 262.
Lespedeza stuevei Nutt., Tall bush clover, KF 666.
Medicago minima (L.) L., Small bur clover, KF 238.
Mimosa nuttallii (DC.) B.L. Turner, Sensitive briar, KF 332.
Neptunia lutea (Leavenw.) Benth., Yellow neptunia, KF 1058.
Pedimelum digitatum (T. & G.) Isely, Palmleaf scurfpea, KF 408.
Rhynchosia minima (L.) DC. var. *minima*, Least snoutbean, KF 356.
Senna occidentalis (L.) Link, Coffee senna, KF 1022.
Sesbania drummondii (Rydb.) Cory, Rattlebush, KF 526.
Sesbania exaltata (Raf.) Rydb. ex A. Hill., Hemp sesbania, KF 585.
Sophora affinis T. & G., Texas sophora, KF 309.
Strophostyles helvula (L.) Ell., Trailing wild bean, KF 957.
Trifolium carolinianum Michx., Carolina clover, KF 237.
Trifolium vesiculosum Savi var. *vesiculosum*, Arrowleaf clover, KF 340. *
Vicia ludoviciana Nutt., Deer pea, KF 291.

FAGACEAE

- Quercus falcata* Michx., Southern red oak, KF 513.
Quercus incana Bartr., Bluejack oak, KF 376.
Quercus lyrata Walt., Overcup oak, KF 507.
Quercus macrocarpa Michx. var. *macrocarpa*, Bur oak, KF 308.
Quercus margarettiae Ashe ex small, Sand post oak, KF 1115.
Quercus nigra L., Water oak, KF 324.
Quercus phellos L., Willow oak, KF 323.
Quercus shumardii Buckl., Shumard oak, JS 6689.
Quercus stellata Wang., Post oak, KF 374.

GENTIANACEAE

- Sabatia campestris* Nutt., Prairie gentian, KF 394.

GERANIACEAE

- Geranium carolinianum* L. var. *carolinianum*, Carolina geranium, KF 255.

HALORAGRACEAE

- Myriophyllum heterophyllum* Michx., Changeleaf parrot's feather, KF 432.

HAMAMELIDACEAE

- Liquidambar styraciflua* L., Sweetgum, KF 511.

HYDROPHYLLACEAE

- Hydrolea ovata* Nutt. ex Choisy, Hairy hydrolea, KF 521.

- Nama hispidum* Gray, Rough nama, KF 430.

- Nemophila phacelioides* Nutt., Large flowered nemophila, KF 288

- Phacelia hirsuta* Nutt., Hairy phacelia, KF 256.

JUGLANDACEAE

- Carya aquatica* (Michx.) Nutt., Water hickory, KF 371.

- Carya texana* Buckl., Black hickory, KF 373.

- Juglans nigra* L., Black walnut, KF 268.

LAMIACEAE

- Brazoria truncata* (Benth.) Engelm. & Gray var. *pulcherrima* (Lundell) M.W. Turner, Centerville brazos mint, KF 379.

- Hedeoma hispida* Pursh, Marsh mermaidweed, KF 396.

- Lamium amplexicaule* L., Henbit, KF 719. *

- Lycopus rubellus* Moench, Water horehound, KF 439.

- Monarda fistulosa* L., Wild horsemint, KF 480.

- Monarda punctata* L., Spotted horsemint, KF 357.

- Physostegia intermedia* (Nutt.) Engelm. & Gray, Intermediate dragonhead, KF 416.

- Physostegia virginiana* (L.) Benth., Virginia dragonhead, JS 6697.

- Salvia lyrata* L., Lyreleaf sage, KF 240.

- Scutellaria cardiophylla* Engelm. & Gray, Heartleaf skullcap, KF 436.

- Scutellaria parvula* Michx., Small skullcap, KF 279.

- Stachys crenata* Raf., Shade betony, JS 6682.

- Stachys tenuifolia* Willd. subsp. *tenuifolia*, Slenderleaf betony, KF 629.

- Teucrium canadense* L., American germander, KF 654.

LAURACEAE

- Sassafras albidum* (Nutt.) Nees, Sassafras, KF 263.

LINACEAE

- Linum sulcatum* Riddell var. *sulcatum*, Grooved flax, KF 395.

LYTHRACEAE

- Ammannia coccinea* Rottb., Purple ammania, KF 479.

- Lythrum alatum* Pursh, Lanceleaf loosestrife, KF 1086.

MALVACEAE

- Hibiscus laevis* All., Scarlet rosemallow, KF 359.

- Hibiscus moscheutos* L. subsp. *lasiocarpus* (Cav.) Blach., Swamp rosemallow, KF 359.

Modiola caroliniana (L.) G. Don, Carolina modiola, KF 277.

Sida rhombifolia L., Diamond leaf mallow, KF 618.*

Sida spinosa L., Prickly mallow, KF 603.

MENISPERMACEAE

Cocculus carolinus (L.) DC., Carolina snailseed, JS 6684.

MOLLUGINACEAE

Mollugo verticillata L., Thread carpetweed, KF 652.

MORACEAE

Maclura pomifera (Raf.) Schneid., Osage orange, KF 510.

Morus rubra L., Red mulberry, KF 370.

MYRICACEAE

Myrica cerifera L., Southern waxmyrtle, KF 258.

NYCTAGINACEAE

Mirabilis albida (Walt.) Heimerl, Four o'clock, KF 464.

OLEACEAE

Forestiera acuminata (Michx.) Poir., Swamp privet, KF 225.

Fraxinus americana L., White ash, KF 609.

Fraxinus pennsylvanica Marsh., Red ash, JS 6683.

Ligustrum sinense Lour., Chinese privet, KF 717.*

ONAGRACEAE

Gaura longiflora Spach., Tall guara, KF 492.

Gaura parviflora Dougl. ex Lehm., Small flower gaura, KF 952.

Ludwigia alternifolia L., Bushy seedbox, KF 485.

Ludwigia decurrens Walt., Winged seedbox, KF 646.

Ludwigia glandulosa Walt., Creeping seedbox, KF 440.

Ludwigia peploides (Kunth) Raven subsp. *glabrescens* Raven, Smooth seed box, KF 422.

Oenothera heterophylla Spach subsp. *heterophylla*, Varileaf evening primrose, KF 374.

Oenothera laciniata Hill, Cutleaf evening primrose, KF 503.

Oenothera speciosa Nutt., Showy evening primrose, KF 270.

OXALIDACEAE

Oxalis dillenii Jacq. subsp. *dillenii*, Dillen's wood sorrel, KF 246.

Oxalis violacea L., Violet wood sorrel, KF 297.

PAPAVERACEAE

Argemone albiflora Hornem. var. *texana* (G. Owenby) Shinnars, White prickly poppy, KF 448.

PASSIFLORACEAE

Passiflora incarnata L., Maypop passion flower, KF 617.

Passiflora lutea L., Yellow passion flower, KF 634.

PHYTOLACCACEAE

Phytolacca americana L. var. *americana*, Common pokeweed, KF 514.

PLANTAGINACEAE

Plantago virginica L., Paleseeded plantain, KF 497.

Plantago wrightiana Dcne., Wright's plantain, KF 384.

POLYGALACEAE

Polygala polygama L. var. *obtusata* Chodat, Bitter milkwort, KF 403.

POLYGONACEAE

Brunnichia ovata (Walt.) Shinnars, Eardrop vine, KF 601.

Polygonum aviculare L., Prostrate knotweed, KF 614.

Polygonum hydropiper L., Water smartweed, JS 6306.

Polygonum pensylvanicum (L.) Small, Pennsylvania smartweed, KF 534.

Polygonum persicaria L., Lady's thumb, KF 692.

Rumex chrysocarpus Moris, Interrupted dock, KF 388.

Rumex crispus L., Curly dock, KF 414.

Rumex hastatulus Baldw., Heartwing dock, JS 6181.

PORTULACACEAE

Claytonia virginica L. var. *virginica*, Spring beauty, KF 231.

Portulaca umbraticola Kunth, Wingpod purslane, KF 610.

PRIMULACEAE

Samolus valerandi L. subsp. *parviflorus* (Raf.) Hulten, Thinleaf brookweed, KF 361a.

RANUNCULACEAE

Clematis pitcheri T. & G., Pitcher's clematis, KF 348.

Myosurus minimus L., Tiny mouse tail, KF 230.

Ranunculus hispidus Michx. var. *nitidus* (Chapm.) Duncan, Seaside buttercup, KF 233.

RHAMNACEAE

Berchemia scandens (Hill) K. Koch, Alabama supplejack, KF 285.

Frangula caroliniana (Walt.) Gray, Carolina buckthorn, KF 281.

ROSACEAE

Crataegus crus-galli L., Cockspur hawthorn, KF 295.
Crataegus marshallii Eggl., Parsley hawthorn, KF 277.

Crataegus mollis Scheele, Downy hawthorn, KF 475.

Crataegus viridis L. subsp. *viridis*, Green hawthorn, KF 293.

Geum canadense Jacq., White avens, KF 290.

Prunus angustifolia Marsh. var. *angustifolia*, Chickasaw plum, JS 6133.

Prunus gracilis Engelm. & Gray, Sand plum, KF 1060.

Prunus mexicana S. Wats., Mexican plum, JS 6134.

Prunus serotina Ehrhart var. *serotina*, Black cherry, KF 260.

Rubus persistens Rydb., Persistent dewberry, KF 693.

Rubus riograndis Bailey, Dewberry, JS 6132.

Rubus trivialis Michx., Southern dewberry, KF 1092.

RUBIACEAE

Cephalanthus occidentalis L. var. *californicus* Benth., Buttonbush, JS 6674.

Diodia teres Walt. var. *teres*, Rough buttonweed, KF 547.

Diodia virginiana L., Virginia buttonweed, KF 530.

Galium aparine L., Catchweed bedstraw, KF 498.

Galium circaezans Michx., Woods bedstraw, KF 278.

Galium tinctorium (L.) J. Scopoli, Dye bedstraw, KF 294.

Houstonia pusilla J. Schopf, Small bluets, KF 229.

Oldenlandia boscii (DC.) Chapm., Bluets, KF 228.

RUTACEAE

Zanthoxylum clava-herculis L., Prickly ash, KF 482.

SALICACEAE

Populus deltoides Bart. ex Marsh. subsp. *deltoides*, Cottonwood, KF 413.

Salix nigra Marsh., Black willow, JS 6696.

SAPINDACEAE

Cardiospermum halicacabum L., Balloon vine, KF 584.

Sapindus saponaria L. var. *drummondii* (Hook. & Arn.) Benson, Western soapberry, KF 273.

SAPOTACEAE

Sideroxylon lanuginosum Michx., Woolly bucket bumelia, JS 6690.

SAURURACEAE

Saururus cernuus L., Lizard's tail, KF 442.

SCROPHULARIACEAE

Agalinis heterophylla (Nutt.) Small ex Britt., Prairie agalinis, KF 616.

Castilleja indivisa Engelm., Texas Indian paintbrush, KF 232.

Gratiola brevifolia Raf., Sticky hedge hyssop, KF 640.

Gratiola virginiana L. subsp. *virginiana*, Virginia hedge hyssop, KF 313.

Leucospora multifida (Michx.) Nutt., Narrowleaf leucospora, KF 587.

Nuttallanthus canadensis (L.) Sutton, Old field toadflax, KF 236.

Penstemon laxiflorus Penn.— Loose penstemon, KF 330.

Verbascum thapsus L., Common mullein, KF 720.

Veronica agrestis L., Wayside purslane, JS 6173.

Veronica peregrina L., Purslane speedwell, KF 304.

SOLANACEAE

Physalis angulata L., Cutleaf ground cherry, KF 588.

Physalis mollis Nutt., Field ground cherry, KF 670.

Solanum ptycanthum Dun., American nightshade, KF 677.

Solanum carolinense L. var. *carolinense*, Carolina horse nettle, KF 337.

Solanum elaeagnifolium Cav., Silverleaf nightshade, KF 333.

TILIACEAE

Tilia americana L. var. *caroliniana* (Mill.) Castiglioni, American basswood, KF 527.

ULMACEAE

Celtis laevigata Willd. var. *laevigata*, Texas sugarberry, JS 6691.

Planera aquatica (Walt.) Gmel., Water elm, JS 6676.

Ulmus alata Michx., Winged elm, KF 512.

Ulmus americana L., American elm, KF 509.

Ulmus crassifolia Nutt., Cedar elm, KF 508.

URTICACEAE

Boehmeria cylindrica (L.) Sw., False-nettle, KF 392.

Parietaria pensylvanica Muhl. ex Willd., Hammerwort, KF 299.

Urtica chamaedryoides Pursh, Heartleaf nettle, JS 6686.

VALERIANACEAE

Valerianella radiata (L.) Dufr., Beaked corn salad, KF 303.

VERBENACEAE

Callicarpa americana L., American beautyberry, KF 443.

Glandularia canadensis (L.) Nutt., Rose vervain, KF 321.

Phyla lanceolata (Michx.) Greene, Northern frog fruit, KF 201.

Verbena brasiliensis Vell., Brazilian verbena, KF 525.*

Verbena halei Small, Texas vervain, KF 261.

VIOLACEAE

Viola bicolor Pursh, Field pansy, JS 6163.

Viola missouriensis Greene, Missouri violet, KF 222.

Viola palmata L., Trilobe violet, KF 292.

Viola villosa Walt., Carolina violet, KF 759.

VISCACEAE

Phoradendron tomentosum (DC.) Engelm. ex Gray, Christmas mistletoe, KF 718.

VITACEAE

Ampelopsis arborea (L.) Koehne, Peppervine, KF 385.

Parthenocissus quinquefolia (L.) Planch. var. *quinquefolia*, Virginia creeper, JS 6694.

Vitis mustangensis Buckl., Mustang grape, KF 328.

Vitis palmata Vahl, Catbird grape, KF 362.

Vitis riparia Michx., Riverbank grape, KF 367.

Vitis rotundifolia Michx. var. *rotundifolia*, Muscadine grape, KF 401.

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